DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: METHOD AND APPARATUS FOR PROVIDING A DATA OVER CABLE INTERFACE SPECIFICATION SET TOP GATEWAY INTERFACE TO AN OUT OF BAND TRANSCODER.

Claim Objections

2. Claims 1-31 are objected to because of the following informalities:

Claims 1-31 use multiple abbreviations such as OOB and DSG without prior antecedent description of the abbreviations in the claims.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-11 recites the limitation of "transcoding the QPSK content in the QPSK message into an OOB message comprising DOCSIS content" in claim 8. There is insufficient antecedent basis for this limitation in the claim.

Examiner assumes claim 8 was intended to depend on claim 7 where independent claim 7 does state "transcoding the QPSK content in the QPSK message into an OOB message comprising DOCSIS content".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

> The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: ***(See MPEP Ch. 2141)***

> a. Determining the scope and contents of the prior art;
> b. Ascertaining the differences between the prior art and the claims in issue;
> *c.* Resolving the level of ordinary skill in the pertinent art; and
> *d.* Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

5. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwentus et al. (US 2004/0161031 A1 hereinafter Kwentus) in view of Poli et al. (US 2005/0122976 A1 hereinafter Poli).

Regarding claims 1-2, Kwentus teaches the use of a one-way or two-way transcoder (see Kwentus [0013], Fig. 6A, Fig. 7A) with a cable television and modem communication system involving CMTS and DOCSIS (see Kwentus [0014], in Fig. 5, where the CPE can be a legacy set-top box). The transcoder is used for communication

of legacy components such as legacy set-top boxes within an updated communication system (see Kwentus [0029], [0061]), the transcoder receives an encoded signal in a first signal format and then outputs a transcoded signal in an second signal format (see Kwentus [0058], Fig. 11, [0063] describes the transcoder being used in a satellite system, where the received signal in 8 PSK is then transcoded to a QPSK output signal for a reception by a legacy set-top box). But, Kwentus does not explicitly teach extracting the content encapsulated in the DOCSIS datagram of the first signal format received.

Poli teaches creating DOCSIS datagrams containing OOB messages (see Poli [0063-[0066], Fig. 5), transmitting the datagram via DSG tunnel in a HFC network with use of a cable plant (see Poli Fig. 1, [0039]) from the CMTS to the destination network device (see Poli [0066]-[0068]), and extracting the OOB message content from a DOCSIS datagram at the network device (see Poli [0068]) in a broadband communication system (see Poli [0023]-[0025], Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have been motivated to combine Kwentus' teachings of the use of a transcoder with a legacy set-top box in an updated communication system using a CMTS with the teachings of Poli for creating OOB content using DOCSIS datagrams and extracting the content from the DOCSIS datagrams in a communication system using a CMTS, a HFC, and a network device. One would have been motivated to do so for an improved transcoder which extracts messages by combining the transcoder for

use with a legacy set-top box of Kwentus with the extraction of DOCSIS content taught by Poli.

Regarding claims 3-6, Kwentus discloses the a transcoder with the use of DOCSIS datagrams in a communications system (see Kwentus [0014], in Fig. 5) and modulating extracted content into a QPSK message (see Kwentus, [0053], [0057], where the first signal containing DOCSIS content is transcoded into a second signal being QPSK format), but Kwentus does not explicitly state the process of decoding the datagram, extracting a message, and reconstructing a message.

However, Poli teaches decoding the DOCSIS datagram, decoding the IP datagram (see Poli, [0068]), where the DOCSIS datagram comprising physical data units dependent on the number of IP packets to encapsulate (see Poli, [0036], Fig. 5), and reconstructing content from an OOB message comprising DOCSIS content first reconstructing an IP datagram and then reconstructing a UDP datagram, extracting the content from the UDP datagram (see Poli, [0068], Fig. 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have been motivated to combine Kwentus' teachings of the use DOCSIS datagrams in a communications system and modulating an extracted content from a first incoming single into a QPSK message as a second outgoing signal with that of Poli for decoding message from a first signal and reconstructing the message into a different format. One would have been motivated to do so for improving the functionality of transcoder for communication of messages between updated components to legacy

components in a network by combining the transcoder of Kwentus with decoding and extracting a message from the incoming signal and reconstructing a message in a new format as described by Poli before outputting the differently modulated signal from the transcoder.

Regarding claims 7-11 and 23-27, Kwentus teaches a one way (Fig. 6A) and two-way transcoder ([0073]-[0075], Fig. 7C-7D) that captures a signal from the legacy set-top box and transcodes the signal into a format to output to the CMTS, ([0057], Fig. 5) where the set-top box can be sending messages in QPSK format and the CMTS requiring messages encapsulated in DOCSIS datagrams ([0053]). Where, extracting the content received in a QPSK format message from the set-top box would have been necessary to incorporate in Kwentus' transcoder for transcoding a signal from the legacy set-top box into a format for the CMTS ([0058]). But, Kwentus does not explicitly disclose transcoding the content into an OOB message comprising DOCSIS datagrams.

However, Poli teaches encapsulating an OOB message into DOCSIS datagrams (see Poli [0063]-[0066], Fig. 5) and transmitting the OOB message over a DSG tunnel (see Poli [0067]). Where, a computer-readable carrier including computer program instructions that instruct a computer to perform the steps(see Poli, [0018], [0032], Figs. 2-3, computer programs item 206 are stored in readable storage medium item 204).

One of ordinary skill at the time of invention would have been motivated to combine the teachings of Poli with that of Kwentus to provide a transcoder that captures and extracts content from a QPSK message sent by the legacy set-top box, transcodes

the content into a OOB message comprising DOCSIS datagrams and transmit the message via DSG tunnel to the CMTS.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have been motivated to combine the transcoder of Kwentus using DOCSIS datagrams in a communications system and modulating an extracted content from a first incoming single into a QPSK message as a second outgoing signal with that of Poli for decoding a message from a first signal and reconstructing the message into a different format. One would have been motivated to do so for improving the functionality of transcoder for communication of messages between legacy components to updated components to in a network by combining the transcoder of Kwentus with decoding and extracting a message from the incoming signal and reconstructing a message in a new format as described by Poli before outputting the differently modulated signal from the transcoder.

Regarding claims 12 and 28, Kwentus teaches a two-way transcoder ([0073]-[0075], Fig. 7C-7D) that captures a signal from the legacy set-top box or CMTS and transcodes the signal into a format to output to the legacy set-top box or CMTS, ([0057]-[0058], Fig. 5) where the set-top box can be sending messages in QPSK format and the CMTS requiring messages encapsulated in DOCSIS datagrams ([0053], the transcoder must include a QPSK modulator/demodulator in order to transcode a message to or from QPSK format). However, while Kwentus mentions the components of the transcoder, Kwentus does not explicitly disclose the components of the transcoder.

But, Poli does teach an apparatus for enabling communication between a set-top device and a DOCSIS DSG environment, said apparatus comprising:

cable plant feed to a cable plant (see Poli [0027], Fig. 1, where it is well known in the art that the HFC network includes a cable plant feed to a cable plant);

a filter for separating in-band traffic (see Poli Fig. 3 item 12) from the DSG tunnel traffic (see Poli Fig. 3, item 50),

a tuner/QAM demodulator, which receives the DSG tunnel from a CMTS, (see Poli [0042], Fig. 3, item 342);

a DOCSIS MAC (see Poli [0068], item 380);

a central processing unit (see Poli [0018], [0073], Fig. 2, item 202); and

a memory, said memory comprising a program module. (see Poli [0018], [0032], Figs. 2-3, computer programs item 206 are stored in readable storage medium item 204).

Where Poli further discloses the use of a conditional access system (see Poli, [0028] and [0054] refers to conditional access messages being handled by the network device, hence a conditional access system). Poli fails to disclose the use of a QPSK modulator, but the transcoder Kwentus teaches must include a QPSK modulator/demodulator in order to transcode a message to or from QPSK format.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have been motivated to combine the teachings of Kwentus with that of Poli for providing communication between a legacy set-top box using a transcoder apparatus that transcodes QPSK messages to a DOCSIS format comprising

the aforementioned components. One would have been motivated to do so for an improved functionality of a transcoder whereby including the components of Poli with that of the transcoder of Kwentus would have achieved such.

Regarding claim 13, the claimed limitations have been analyzed and rejected for the same rationale as stated in claims 1 and 12 above, where the apparatus of claim 12 performs the method of claim 1.

Regarding claim 14, the claimed limitations have been analyzed and rejected for the same rationale as stated in claims 7 and 12 above, where the apparatus of claim 12 performs the method of claim 7.

Regarding claim 15, the claimed limitations have been analyzed and rejected for the same rationale as stated in claims 12 above.

Regarding claim 16, Kwentus and Poli further teach the use of a network controller in the network device (see Poli, [0049]).

Regarding claim 17, the claimed limitations have been analyzed and rejected for the same rationale as stated in claim 1 above, where Kwentus and Poli further teach a computer-readable carrier including computer program instructions that instruct a

computer to perform (see Poli, [0018], [0032], [0047], Figs. 2-3, computer programs item 206 are stored in readable storage medium item 204) the steps of claim 17.

Regarding claim 18, Kwentus and Poli further teach the computer readable carrier of claim 17, wherein said capturing an OOB message comprising DOCSIS content comprises retrieving an OOB message from a cable plant (see Poli, [0027], Fig. 1, where the OOB message 50 is retrieved from the HFC network, and it is well known in the art that an HFC network includes the use of a cable plant).

Regarding claims 19-22, the claimed limitations have been analyzed and rejected for the same rationale as stated in claims 3-6 and 17 above, where the computer-readable carrier of claim 17 performs the method of claims 3-6.

Regarding claims 29-31, Kwentus and Poli further teach the OOB messages received from the DSG tunnel comprise OOB messages comprising DOCSIS content (see Poli, [0068]), where the DOCSIS content comprises one ore more DOCSIS datagrams (see Poli, [0068]), and each said DOCSIS datagram comprises one or more PDUs and encapsulates a IP datagram (see Poli, [0036]).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Carr (US 2002/0141585 A1) – a modem or network gateway using DOCSIS and multiple security policies

Weinstein et al. (US 2005/0155082 A1) – connecting a set-top box to a communication network via a subscriber interface device to down-convert and up-convert

Quigley et al. (US 6,785,564 B1) – a power management system for DOCSIS compliant equipment

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark P. Stanley whose telephone number is (571) 270-3757. The examiner can normally be reached on 8:00AM - 5:00PM Mon-Fri EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571) 272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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